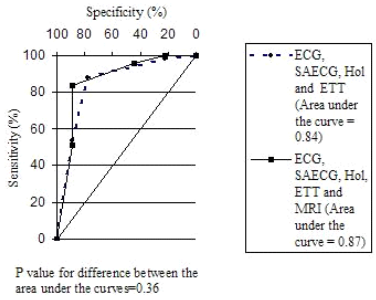
Sp=61%) and MRI (Se=56% Sp=92%). ROC analysis showed that, in comparison to the combination of ECG, SAECG, HoI and ETT, the area under the curve did not differ significantly for their combination with MRI.
Conclusion: This study demonstrates that an ECG offers the highest sensitivity and the SAECG offers the highest specificity in diagnosing ARVD. MRI offers high specificity but its combination with the ECG, SAECG, ETT and HoI does not improve the utility of the other tests significantly.

Figure: Receiver operating curve analysis for comparison of combinations conduction tests and MRI for diagnosis of ARVD



P value for difference between the area under the curves=0.36

1127-105 Transient Left Ventricular Apical Ballooning Syndrome: A US Case-Series

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Background: Transient left ventricular apical ballooning syndrome (TLVABS) is a distinct form of acute reversible left ventricular dysfunction which was initially described in Japan. It's frequency and clinical presentation in the U.S. is unclear. This is one of the first descriptions of the syndrome in a U.S. population.
Methods: We identified 10 patients during the year 2002 who had: 1) apical LV ballooning with akinesis or dyskinesis extending beyond a single major coronary artery distribution; 2) a coronary angiogram revealing no stenosis greater than 70%; 3) new ST segment/T wave changes on the presenting electrocardiogram. We investigated the clinical characteristics and short-term outcome of these patients with TLVABS.
Results: All patients were white females; mean age 71.5+12.0 years. Presenting symptoms were chest pain in 5, dyspnea in 3, and chest pain and dyspnea in 2 patients. Eight had at least 1 mm of ST elevation in contiguous leads, typically V2-V5. The QTc was > 500ms in seven patients with a mean QTc of 519 ms+50 ms for all patients. All patients had troponin T and/or CK-MB elevations. The highest recorded median peak troponin T and CK-MB values were 0.59 ng/ml (25th-75th percentile 0.33-0.93 ng/ml) and 14.1ng/ml (9.7-26.9 ng/ml), respectively. An identifiable preceding acute emotional or physiologic stressor was present in 8 of 10 patients. All coronary stenosis in patients with CAD were < 50%, except for 1 patient with a chronic 60% mid-LAD lesion. The mean LVEF at admission was 44.8+10.2%, which improved to 58.4+11.9% at follow-up (22+41 days); p=0.004. All 7 patients with available follow-up had resolution of wall motion abnormalities (29+45 days). Five patients developed left heart failure requiring treatment. All patients were alive at a median follow-up of 6.5 months (range 1-17 months).
Conclusion: This is one of the first series reporting TLVABS in a US population. TLVABS can mimic AMI with ECG changes, elevation of cardiac biomarkers, associated left ventricular dysfunction and in some, clinical heart failure. The short-term prognosis appears favorable with resolution of LV dysfunction. Further studies including long-term follow-up are needed.

1127-106 Usefulness of Tissue Doppler Imaging for Evaluating Systolic and Diastolic Left Ventricular Function in Patients With Primary Cardiac Amyloidosis

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Background: Cardiac amyloidosis is associated with increased left ventricular (LV) wall thickness, normal or decreased LV cavity size, and congestive heart failure (CHF) with normal or mildly reduced LV ejection fraction. **Aim:**To clarify whether tissue Doppler imaging at multiple left ventricular LV sites could help estimate LV systolic and diastolic function in patients with primary amyloidosis. **Methods and Results:** Standard 2-D, Doppler and tissue Doppler echocardiographic study was performed in 12 consecutive patients with primary amyloidosis confirmed by biopsy and 12 matched (age 62±14, 8 males in both groups) normal volunteers. The data were on-line or off-line analyzed using Vivid 7, GE and Echo Pac. The parameters are present average segmental values as mean±SD, T test was used for comparison. The diastolic functions of patients with primary amyloidosis were abnormal (6 were relaxation impaired; 3 were seudonormal; and 4 were restrictive). Tissue Doppler data were different between three types, but not significantly; which may due to limited cases number.

Standard Echo	LVD(cm)	IST(cm)	PWT(cm)	EF(%)	LAarea (cm^2)	DT(msec)	E/Amitral
Normal	4.7±0.6	1.0±0.2	1.0±0.2	64±7	16±4	201±28	1.2±0.5
Amyoloid	4.0±0.7	1.8±0.2	1.7±0.4	57±3	25±7	167±54	1.9±1.0
p	0.02	<0.0001	<0.0001	0.02	<0.0001	0.10	0.12
Tissue Doppler Echo	LVS velocity(cm/sec)	LV velocityE/A	LVTK(cm)	STRs(1/s)	LV STRE/A	LV Systolic Strain (%)	LV StrainE/A
Normal	4.5±1.0	1.9±1.2	0.8±0.2	-1.1±0.3	1.6±0.4	-19±4	1.6±1.1
Amyoloid	3.0±1.4	4.4±1.9	0.4±0.2	-0.8±0.4	3.5±3.2	-10±5	2.7±0.8
p	0.01	0.01	<0.0001	0.02	0.04	<0.0001	0.01

IST=interventricular septal thickness, PWT=LV posterior wall thickness, LV EF=LV ejection fraction. TK=myocardial displacement, STRs=systolic strain rate, STR=strain rate.
Conclusion: Cardiac amyloidosis is charaterized.by an early impaired in systolic and diastolic function. These abnormalities precedes the onset of congestive heart failure and can be detected by tissue Doppler velocity, displacement, strain rate and strain

1127-107 Different Criteria of Cardiac Resynchronization Therapy Have Different Prognostic Value for Worsening Heart Failure or Major Arrhythmic Events in Idiopathic Dilated Cardiomyopathy

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Cardiac resynchronization therapy (CRT) with biventricular pacing (biV) improves cardiac symptoms in heart failure patients with dilated cardiomyopathy. There are still controversies about pertinent criteria for CRT and about prophylactic indications of biV cardioverter defibrillator.
Methods. In 201 patients with idiopathic dilated cardiomyopathy (IDC) in sinus rhythm (WHO criteria; age 51±12 years; left ventricular ejection fraction 32±12%), the relative risk of 1) cardiac death due to heart failure or heart transplantation and 2) sudden death or sustained ventricular tachycardia (VT) or fibrillation (VF) were calculated separately according to the inclusion criteria in the MUSTIC, InSync, MIRACLE and CONTAK studies.
Results. The percentage of patients meeting the inclusion criteria was respectively 6% for MUSTIC, 7.5 % for InSync, 10 % for MIRACLE and 23 % for CONTAK. With a follow-up of 51±42 months, 28 patients suffered cardiac death (15 progressive CHF, 13 sudden deaths), 20 underwent heart transplantation and 12 had sustained VT/VF. Relative risks of events are in table. Major arrhythmic events were 16 % of all the cardiac events for the MUSTIC patients, 11% for InSync, 36 % for MIRACLE and 42 % for CONTAK.
Conclusion. In IDC, the patients with the less restrictive inclusion criteria of CRT had the highest risk of major arrhythmic events. By contrast, severe HF patients with the MUSTIC criteria of CRT mainly had a risk of worsening heart failure and may not benefit from biV cardiverter defibrillator.

	NYHA	LV EDD	LV EF	QRS	RR (95% CI) HF events	p	RR (95% CI) Arrhythmic events	p
MUSTIC	III	>60 mm	<35 %	>150 ms	4.63 (1.76-12.19)	0.0019	1.16 (0.15-8.70)	0.89
InSync	III-IV	≥60 mm	<35 %	≥150 ms	4.27 (1.85-9.90)	0.0007	1.45 (0.19-11.10)	0.72
MIRACLE	III-IV	≥55 mm	≤35 %	≥130 ms	3.14 (1.41-6.99)	0.005	1.83 (0.63-5.35)	0.55
CONTAK	II-IV		<35 %	≥120 ms	3.67 (1.85-7.29)	0.0002	2.65 (1.19-5.95)	0.018

1127-108 Characteristics of Takotsubo Cardiomyopathy: First US Population-Based Report

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Background: Takotsubo Cardiomyopathy (TC) has been previously described in the Japanese and more recently European literature.This is the first report of this condition in a US population. TC is characterized by (1) suspected acute MI based on symptoms, electrocardiographic (ECG) changes, and increased cardiac serum markers; (2) hyokinesis/akinesis of mid to apical left ventricle (LV) and hyperkinesis of the basal LV on ventriculography, (3) < 75% stenoses in the major coronary arteries, and (4) improvement of LV function on follow-up.
Methods: From January 2002-August 2003 we admitted 9 patients with features consistent with TC. All patients met all 4 criteria for the diagnosis of TC. Data on prestentation included patient characteristics, complete hemodynamic assessment, coronary and LV angiography and echocardiography.
Results: Mean patient age was 60.5 years, and 6 were women (66%). Cardiac risk factors: 7/9 (78%) had hypertension, 2/9 (22%) had diabetes, 2/9 (22%) were smokers, 2/9 (22%) had a family history of premature coronary heart disease, and 3/9 (33%) had treated hypothyroidism. ECG revealed ST elevation in 3/9 (33%), and T wave changes in 6/9 (66%). At presentation, mean ejection fraction was 32.5%, mean wedge pressure was 12.7 mm Hg and cardiac output of 3.14 L/min. 8/9 (88%) patients had physiologic stressors at the time of presentation with 1/9 having an intense emotional stressor. Coronary angiography was normal in all patients and left ventriculography revealed the characteristic Takotsubo (octopus trap) shape. At a mean follow-up of 6 ± 2 months all patients were alive with a mean EF of 49%.
Conclusions: Takotsubo Cardiomyopathy is an unusual and probably underdiagnosed entity. Our data from the first American cohort confirm prior reports of a clinical presenta-